DEC 1 2

0612

I49.2:P25/4

Participation and Expenditure Patterns of Black, Hispanic, and Women Hunters and Anglers

Report 91-3

November 1995

Addendum to 1991
National Survey of
Fishing, Hunting, and
Wildlife-Associated
Recreation

Participation and Expenditure Patterns of Black, Hispanic, and Women Hunters and Anglers

David G. Waddington
Division of Federal Aid
U.S. Fish and Wildlife Service
Washington, D.C.

Division of Federal Aid
U.S. Fish and Wildlife Service
Washington, D.C. 20240
Director, Mollie Beattie
Chief, Division of Federal Aid, Bob Lange

This report is part of a series designed to complement the National and State reports of the 1991 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation. The conclusions are the authors and do not represent official positions of the U.S. Fish and Wildlife Service.

The author acknowledges Richard A. Aiken for his technical and editorial assistance with this research and Curtis Carpenter for design and preparation. Thanks also go out to the many people who reviewed earlier drafts of this report.

I

Contents

Introduction 1

Hunting 3

Overview. 3

Hunting Participation 6

Hunting Expenditures 11

Hunting on Private and Private Land 14

Fishing 17

Overview. 17

Fishing Participation 19

Fishing Expenditures 24

Summary and Conclusions 27

Introduction

The National Survey of Fishing, Hunting, and Wildlife-Associated Recreation (Survey) collects information on individuals' participation levels in terms of number of trips taken, number of days participated, and expenditures on trip-related expenses, equipment, and other items. The National and State reports summarize the Survey's findings for the national and state populations. However, there is a growing interest in information about participation levels of some subgroups of the population. These groups include Blacks, Hispanics, and women.

Interest in participation rates of Blacks and Hispanics arises partially because of their relative size in the make-up of the U.S. population. In 1991, 12.4 percent of the U.S. population was Black and the U.S. Bureau of Census predicts an increase to 14.5 percent by 2025. Hispanics made up nearly 9 percent of the U.S. population in 1991 and their numbers are expected to increase to 16.2 percent by 2025. Given the size and especially the growth potential of these two groups, it is important to understand their hunting and fishing participation patterns and whether they differ from the participation patterns of the rest of the U.S. population.

Women make up approximately 51 percent of the U.S. population. This number is expected to remain constant through 2025. Participation by women in fish and wildlife recreation is of interest because they make up half of the U.S. population and because there is a growing emphasis by resource managers to get more women involved in hunting and fishing.

Participation rates of Blacks, Hispanics, and women are small relative to the total population but do provide great potential for growth. Understanding how participation patterns and levels differ between these subpopulations and the total population provides insight for fish and wildlife resource managers in meeting their needs today and into the future. Additionally, understanding their participation patterns may prove useful in recruitment of new hunters and anglers.

The remainder of this paper is divided into two parts, hunting and fishing. Each part contains a table and several bar graphs showing the participation levels for Blacks, Hispanics, and women. These bar graphs also provide comparisons between these subpopulations and the total population of hunters and anglers. The data for the total population of hunters and anglers include all the subpopulations. Comparisons are made between the subpopulations and the total population including the subpopulations. Data on Black participants include all persons who identified themselves as Black in the interview. This includes Black participants who are male or female, and those who also identified themselves as Hispanic. Likewise, the Hispanic category includes persons of both sexes and of any race. The women category also includes all races.

All data reported herein are from the 1991 Survey and represent participation and expenditures for the calendar year 1991. The 1991 Survey was conducted for the U.S. Fish and Wildlife Service by the U.S. Bureau of the Census. The Bureau of the Census collected the data primarily by telephone; respondents who could not be reached by phone were interviewed in-person. Three interviews were conducted at four month intervals to reduce recall bias associated with asking respondents to report participation in an activity for an entire year. The response rate was 93 percent. For more detailed information on the methods of data collection see the 1991 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation[1].

---

[1] Available from the U.S. Fish and Wildlife Service, Division of Federal Aid, 4401 N. Fairfax Drive, Room 140, Arlington, VA 22203. (703) 358-2156

Overview

Table 1 shows the total number of participants, days and trips, and trip and equipment expenditures for hunters in the three subpopulations and for all hunters. Each of these subpopulations made up a quarter of a million or more participants. Although this is small relative to the total number of hunters (14 million), together these subpopulations made up eleven percent of all U.S. hunters in 1991. Women were the largest subpopulation and spent the most money, a combined total of $371 million dollars on trip and equipment expenditures. Blacks spent $66 million on trip-related expenses and $57 million on hunting equipment for a total of $123 million. Hispanics spent $50 million on trip-related hunting expenses and $68 million on hunting equipment. Black hunters averaged more hunting days and took more trips on average than the other two subpopulations and all hunters together. Black hunters took four more trips on average (18.4 compared to 14.8) than the total population of hunters.

Table 1. Hunters, Days, Trips, and Expenditures by Population Group: 1991.

(16 years old and older. Numbers in thousands)

	[redacted]	Black Hunters	[redacted]	Women Hunters
Hunters	[redacted]	294	[redacted]	1,069
Days of Hunting	[redacted]	5,499	[redacted]	13,512
Mean Days of Hunting	[redacted]	18.9	[redacted]	12.9
Trips	[redacted]	5,405	[redacted]	11,519
Mean Hunting Trips	[redacted]	18.4	[redacted]	11.0
Trip Expenditures	[redacted]	$65,989	[redacted]	$185,031
Mean Trip Expenditures	[redacted]	$225	[redacted]	$178
Equipment Expenditures	[redacted]	$57,071	[redacted]	$186,407
Mean Equip. Expenditures	[redacted]	$237	[redacted]	$259

Figure 1 shows a comparison of mean trip expenditures for hunters[2]. Each of the subpopulations spent less on average than all hunters, with women spending the least. Mean equipment expenditures are shown in Figure 2. Of the subpopulations, Blacks spent the least, $237, on average, and Hispanics spent the most, $328.[3]

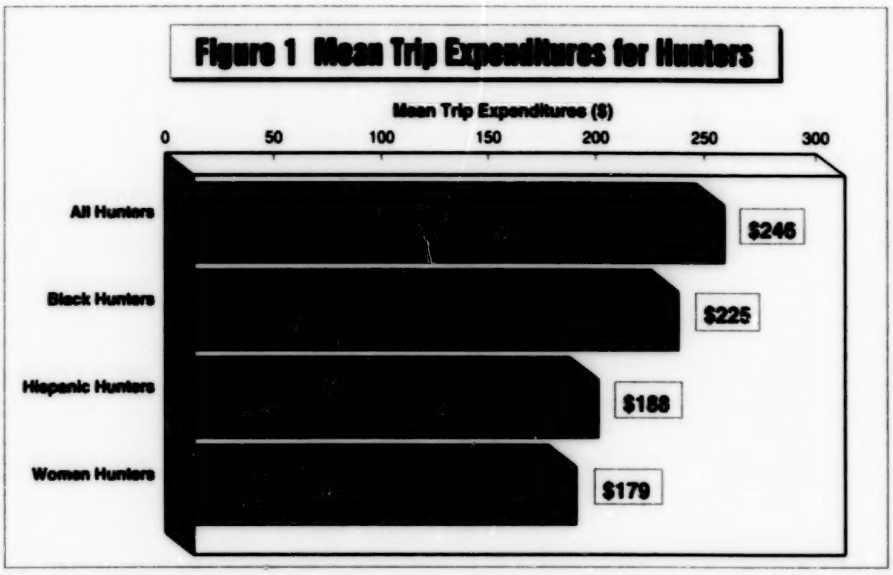


Figure 1 Mean Trip Expenditures for Hunters

Figures 3 and 4 show what percent of each population hunt on private and public land, respectively. Many hunters hunt on both private and public land. Most hunters (83%) hunt on private land. Although more Hispanic hunters hunt on private land than public land, over 50 percent also hunt on public land, a greater percent than any other group. In contrast, only 33 percent of Black hunters hunt on public land while 89 percent hunt on private land.

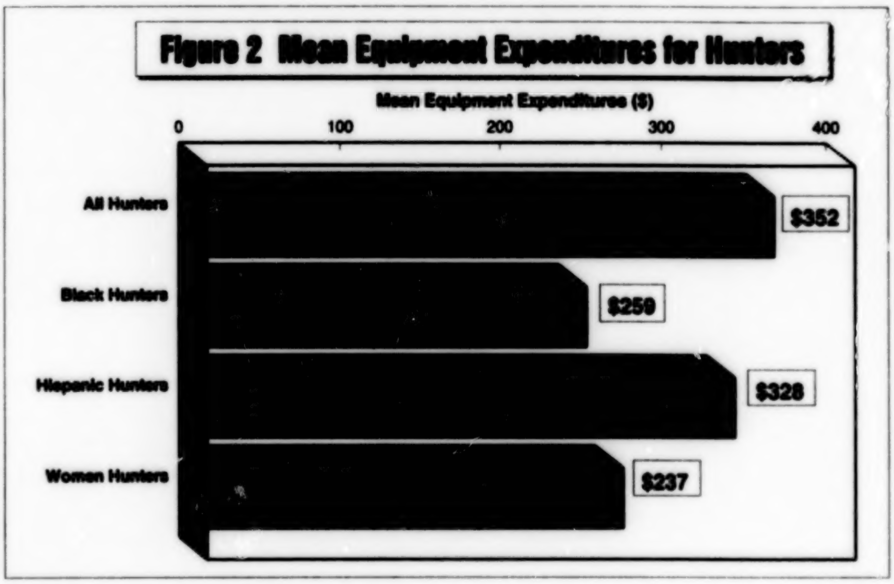


Figure 2 Mean Equipment Expenditures for Hunters

---

[2] Trip expenditures are made up of food, drink, lodging, public and private transportation, guide fees, pack trip or package fees, public and private land use access fees, and rental of equipment.

[3] Equipment expenditures are made up of rifles, shotguns, and other firearms, ammunition, bows and arrows, telescopic sights, decoys, hunting dogs and associated costs, camping equipment, binoculars, special hunting clothing, processing and taxidermy costs and other equipment purchases. Excluded from these expenditures are special equipment purchases such boats, campers, trucks, and cabins.

To better understand each subpopulation and the differences between them, participation patterns of each subpopulation by age, education, income, and place of residence are compared with each other and with all hunters. This additional breakdown provides a better understanding of differences within and between each population. Age and education are defined by their categories. Income is based on household income asked at the beginning of the survey year.

Place of residence is based on the hunters' response to a question about where they lived: big city or urban area; small city or town; or rural area.

Attempts were made to get sufficient sample sizes for each population. However, some groupings did not contain enough sample to report reliably. Data are not reported where the sample size is less than thirty. All these estimates are point estimates with confidence intervals around them. Small differences between subpopulations and within demographic groups should be interpreted with caution.

Figure 3 Hunters Hunting on Private Land

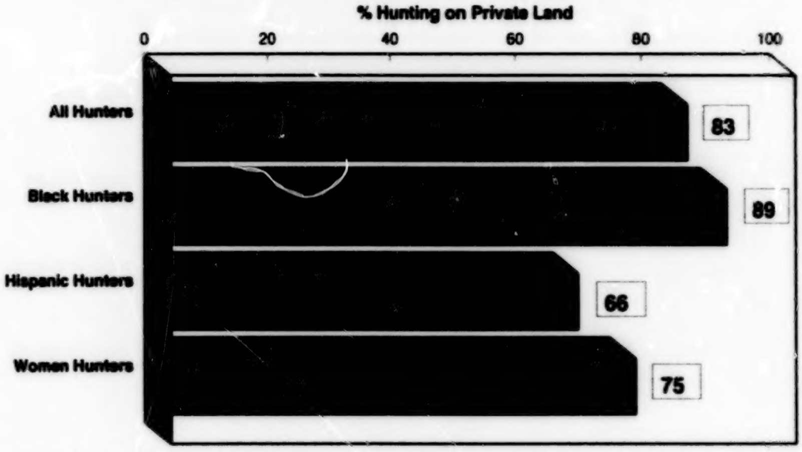
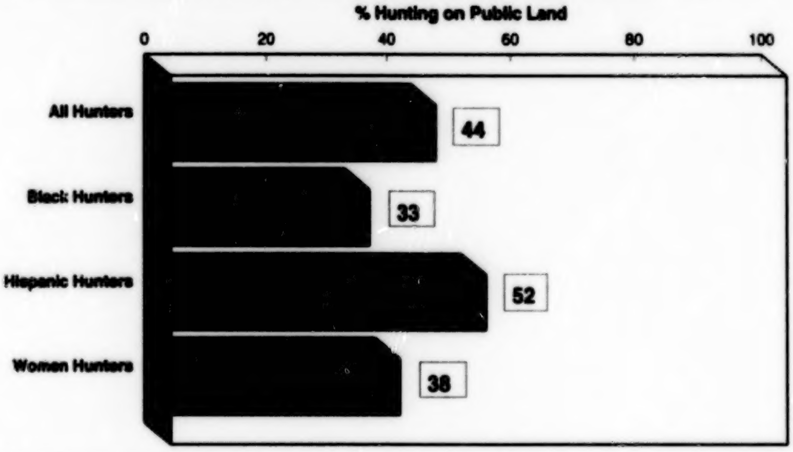


Figure 4 Hunters Hunting on Public Land



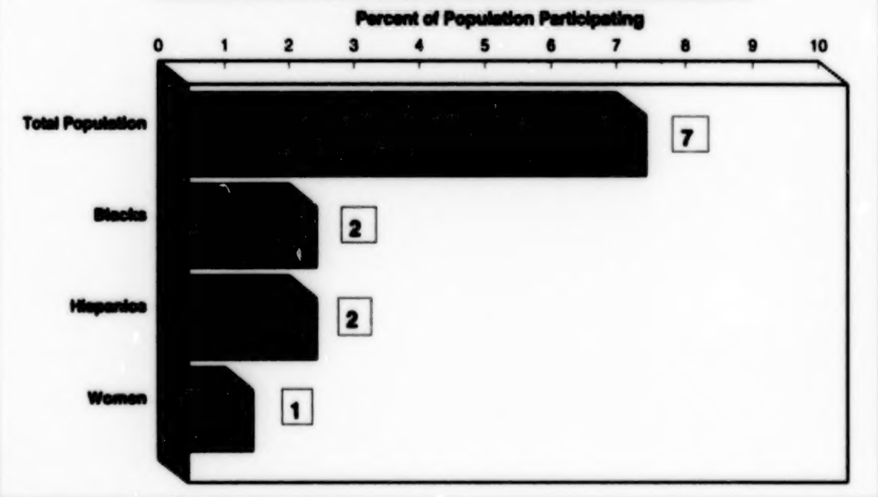
Hunting Participation

Figure 5 shows the hunting participation rates for persons age 16 and over for the U.S. population, Blacks, Hispanics, and women. The participation rates for the subpopulations drop off dramatically from seven percent for the total population to two percent for Blacks and Hispanics and one percent for women. Figures 6, 7, 8, and 9 show participation rates for each of the subpopulations by age, education, income, and place of residence, respectively. The participation rate for the total population is constant until the 45-54 age category where it begins to decline. Each subpopulation maintains a relatively constant participation rate across all ages. Sample sizes are too small to report data on Hispanics in the 45-54 age categories and for Hispanics and women in the 55 and over age category.

With the exception of women, participation rates for all the populations are higher for persons who are high school graduates or have some college than for persons in the other education categories (Figure 7). The participation rate for women is constant at one percent for all levels of education.

Hunting participation rates by income level increase with income up to the $30-50,000 household income category (Figure 8). Sample sizes are too small to report data for Hispanics in the less than $10,000 income category and for Blacks and Hispanics in the $50,000 and over income category.

Figure 5 Participation Rates for Hunting



Participation rates vary greatly for persons living in big cities, small cities, and rural areas. Figure 9[4] shows that the participation rate for each subpopulation is highest for rural residents and lowest for big city residents.

Figures 10 through 13 contain a breakdown of mean days of hunting for each population by

Figure 6 Participation Rates for Hunting, by Age

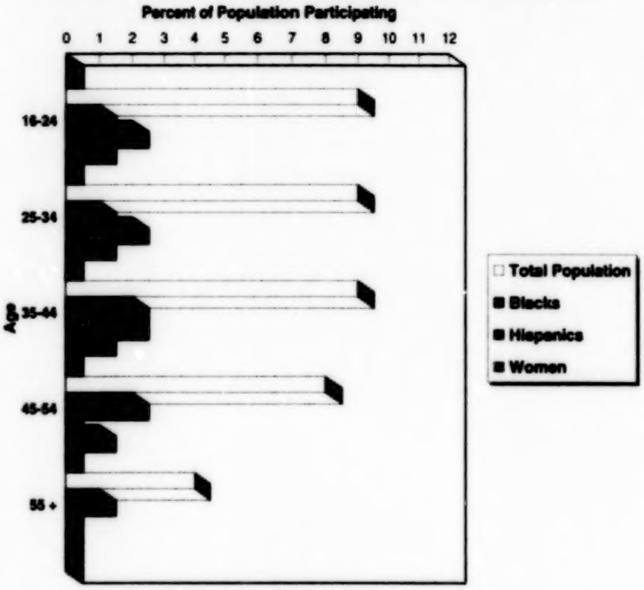


Figure 7 Participation Rates for Hunting, by Education

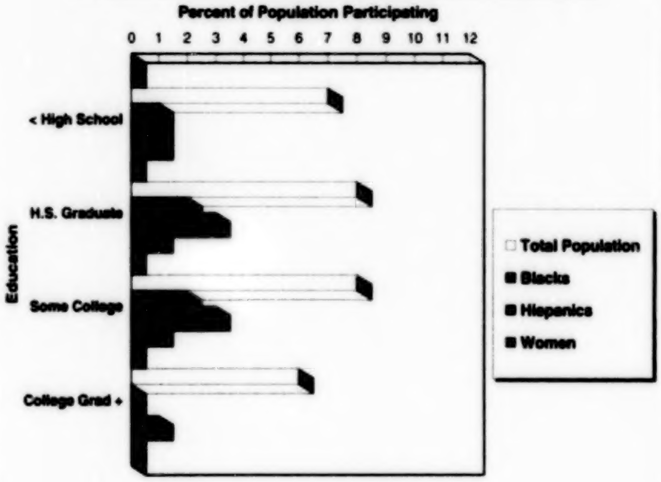


Figure 8 Participation Rates for Hunting, by Income

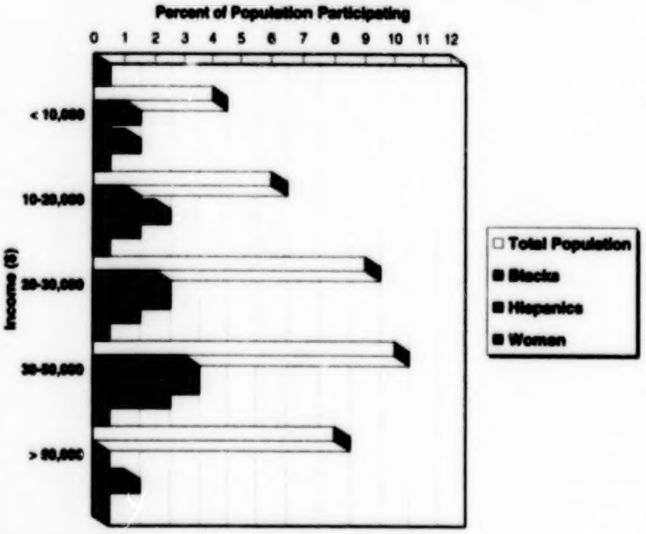
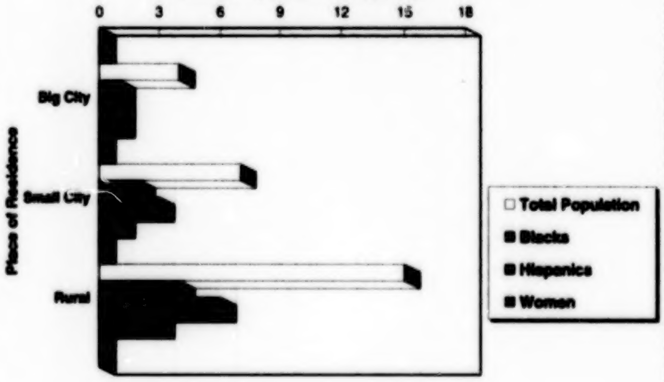


Figure 9 Participation Rates for Hunting, by Place of Residence



---

[4] Because of the high participation rate for rural residents, 15%, the scale on this bar graph is different from the other figures.

age, education, income, and place of residence, respectively. Figure 10 shows that there is a slight drop in the mean number of days hunted as the population ages, except for Blacks and women. The mean number of days hunting for Blacks increases up to the 35-44 age category and then begins to decline. Mean hunting days for women decline initially then begin to increase after the 35-44 age category. Figure 11 shows that hunting participation by the total population of hunters tends to decrease with increasing education. Black and women

Figure 10 Mean Days of Hunting, by Age

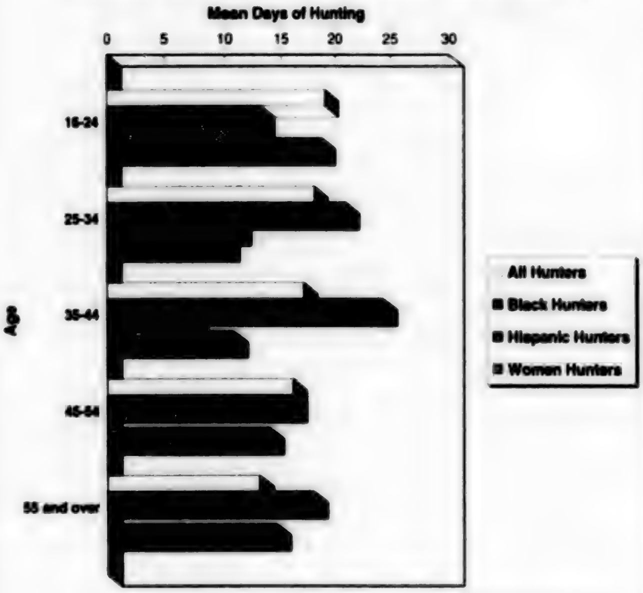


Figure 11 Mean Days of Hunting, by Education

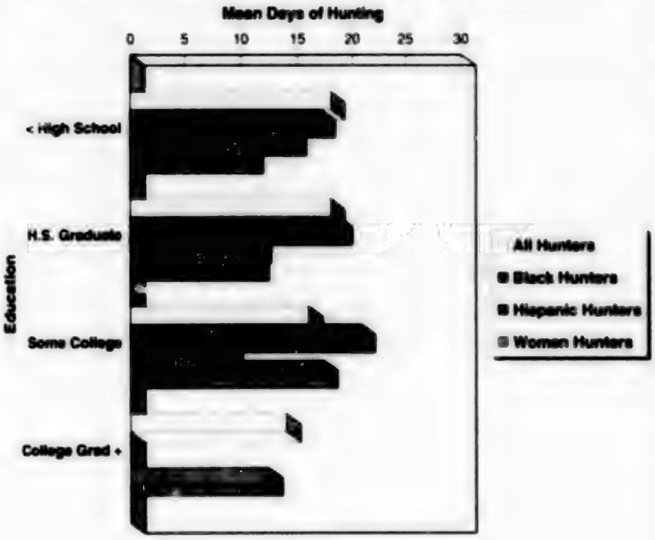


Figure 12 Mean Days of Hunting, by Income

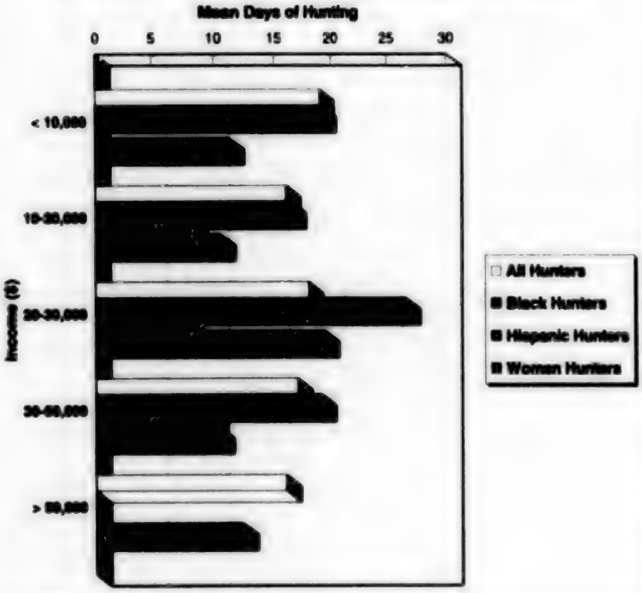
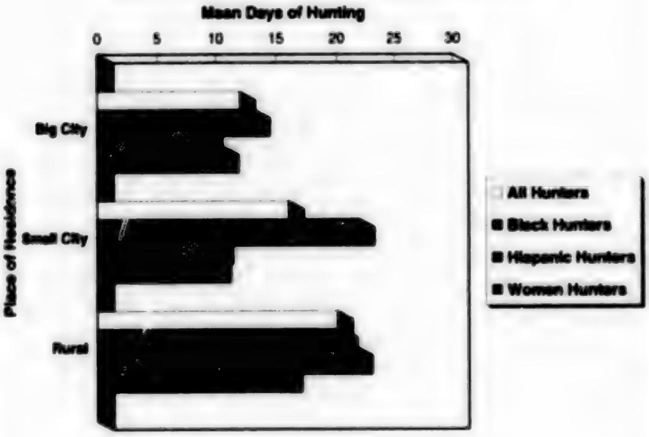


Figure 13 Mean Days of Hunting, by Place of Residence



hunters do not follow this pattern. Black hunters with higher education hunt more than those with less education. Mean days hunted by women is greatest for women with some college and relatively constant for the other education levels.

Figure 12 shows that Black hunters in the $20-30,000 income category hunt more days than any other income category in any population group. In fact, Black hunters hunt more days, on average, than all the subpopulations and the all hunters group in all categories where data are reported for Black hunters.

Figure 13 reveals that, with the exception of Black hunters, persons who live in rural areas hunt more days than big city and small city residents. The highest mean days of hunting for Black hunters is in the small city category.

Figures 14 through 17 contain a breakdown of demographics for mean hunting trips taken.

Figure 14 Mean Hunting Trips, by Age

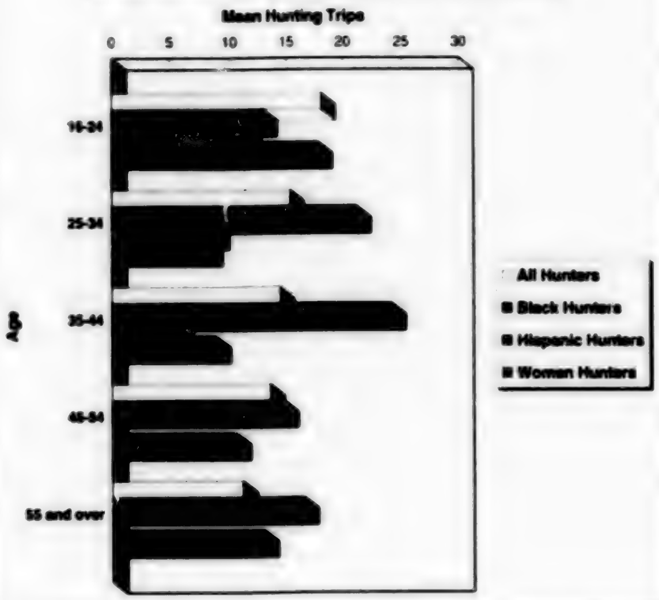


Figure 15 Mean Hunting Trips, by Education

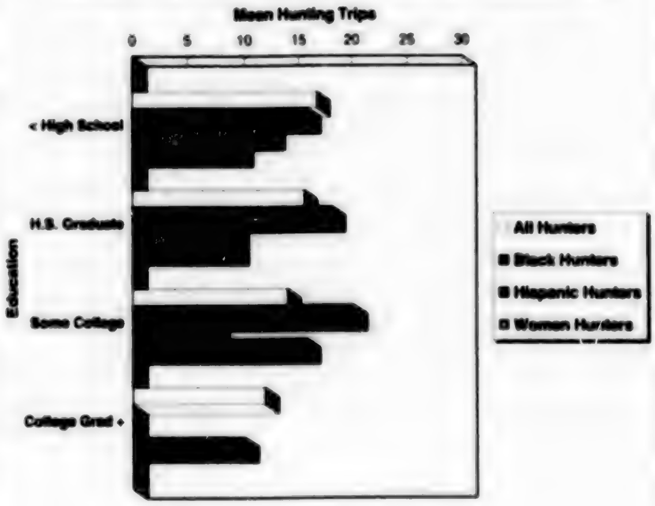


Figure 16 Mean Hunting Trips, by Income

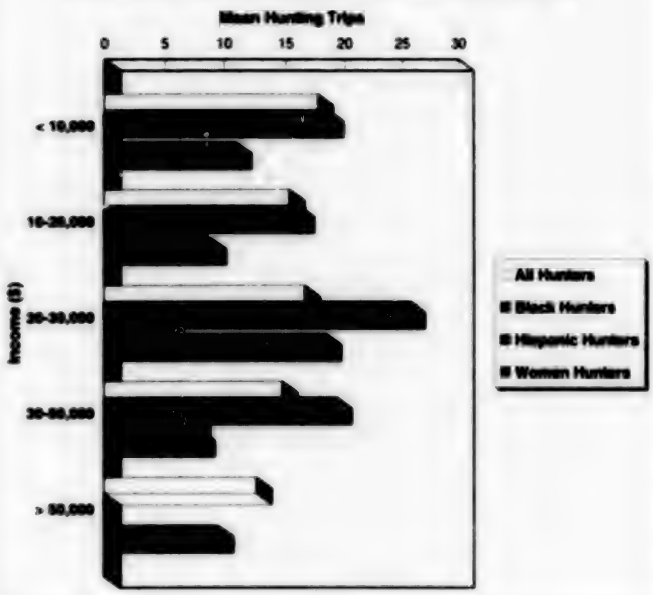
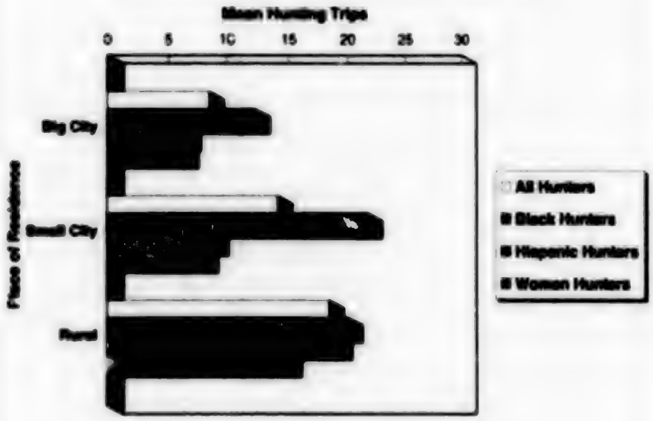


Figure 17 Mean Hunting Trips, by Place of Residence



Examination of mean hunting trips reveals a pattern similar to that of days of hunting. Black hunters with higher education tend to hunt more days and take more trips than those with less education. This is opposite the trend for all hunters. Women with some college also hunt more days and take more hunting trips than women with less education. Black hunters in the $20-30,000 income category take more trips than hunters in other income categories. Except for Black hunters, rural residents take more trips than big city and small city residents. Small city Black hunters take the highest number of trips.

Hunting Expenditures

Mean trip expenditures are presented in Figures 18 through 21. There appears to be no clear pattern for the subpopulations of hunters and all hunters on trip expenditures in relation to age. However, trip expenditures are lowest for all populations in the 16-24 age category.

Figures 19 and 20 show a pattern of higher trip expenditures at

Figure 18 Mean Trip Expenditures, by Age

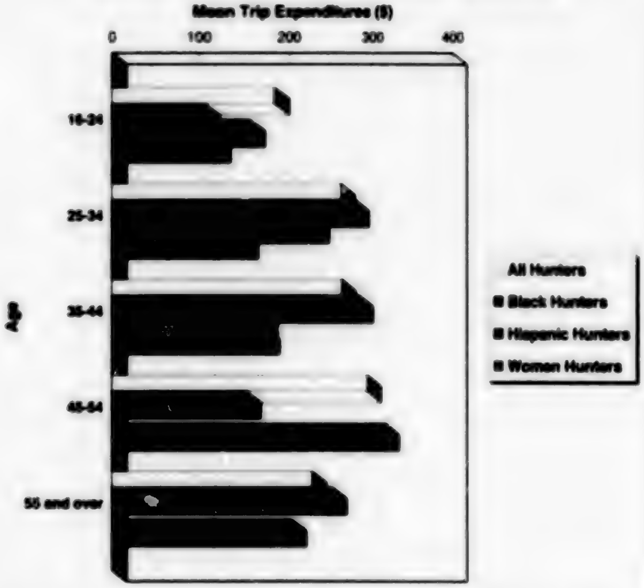


Figure 19 Mean Trip Expenditures, by Education

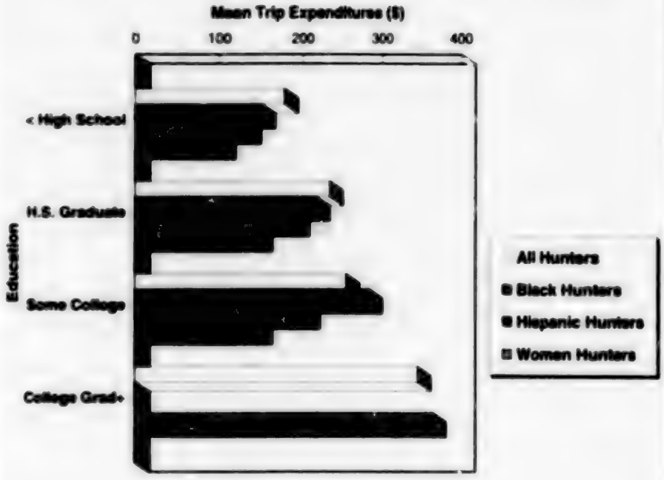


Figure 20 Mean Trip Expenditures, by Income

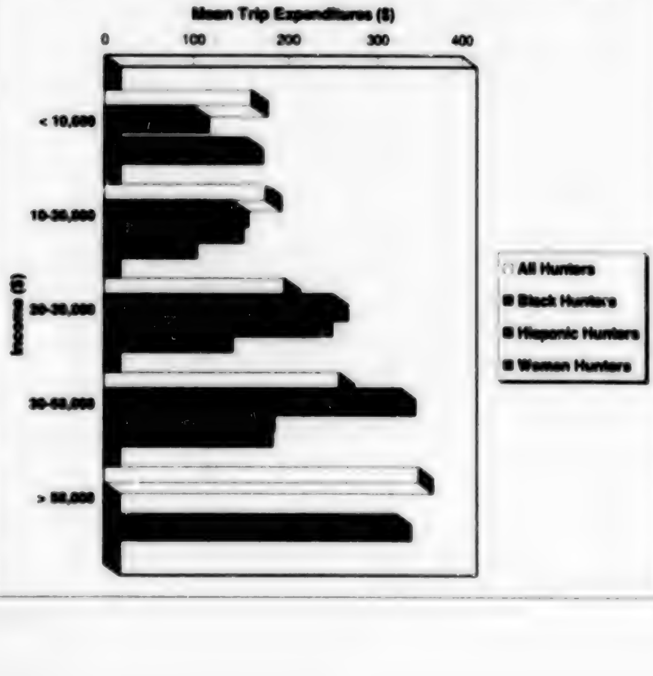
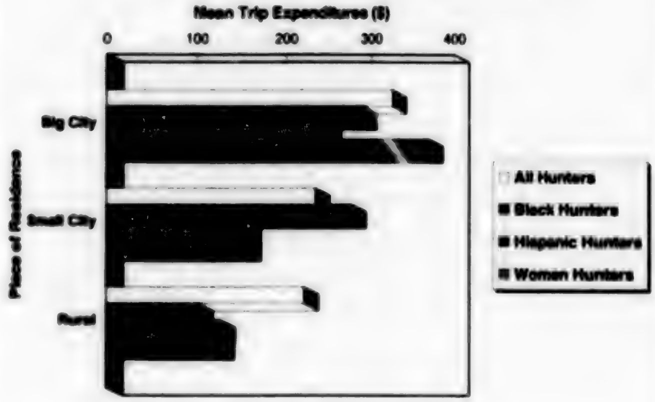


Figure 21 Mean Trip Expenditures, by Place of Residence



higher education and income levels for all groups. One exception to this is Hispanic hunters in the $30-50,000 income category have lower mean trip expenditures than those in the $20-30,000 income category. Figure 21 shows that trip expenditures are highest for all groups where the hunter lives in a big city and lowest for hunters living in rural areas.

Figures 22-25 contain the breakdown for mean equipment expenditures by demographic characteristics for each subpopulation. With the exception of women, equipment expenditures are highest for people in the 25-34 and 35-44 age categories. Women in these age categories spent the least, on average, for hunting equipment. Women aged 16-24 and 45 and over spent half again as much on hunting equipment as women aged 25-44.

Although sample sizes limit the availability of data, higher education and income seem to result in higher equipment expenditures (Figure 23 and Figure 24). For all hunters there is little difference between urban and rural residents with respect to expenditures on hunting equipment (Figure 25). Women who live in big cities spent significantly more on equipment than women who live in small cities and rural areas. Hispanics show the reverse of the trend for women, i.e., rural Hispanic hunters spent more on average than the more urban Hispanic hunters. Black hunters who live in rural areas spent less than Black hunters from both small and big cities.

Figure 22 Mean Equipment Expenditures, by Age

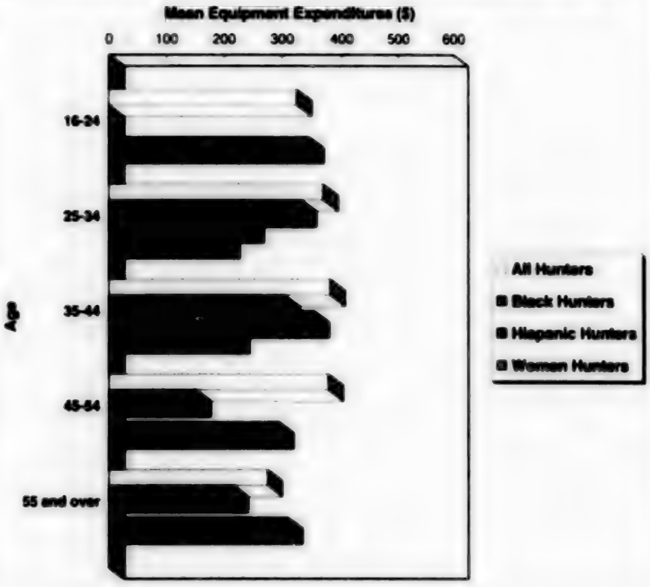


Figure 23 Mean Equipment Expenditures, by Education

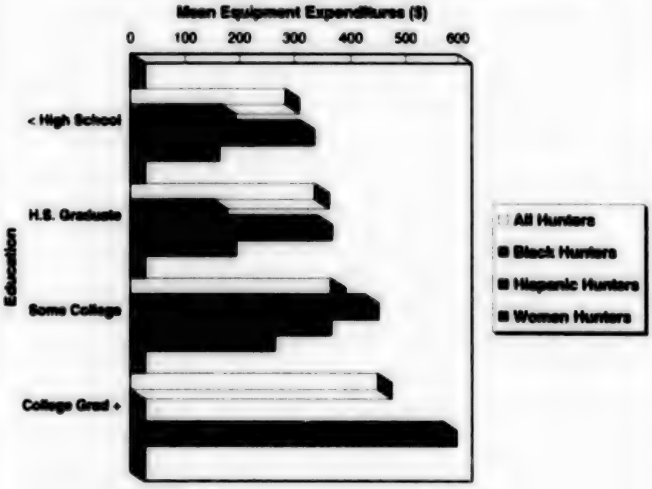


Figure 24 Mean Equipment Expenditures, by Income

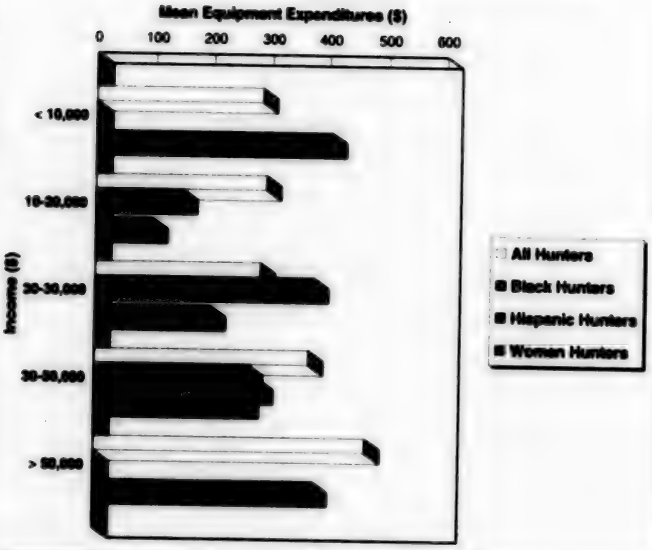
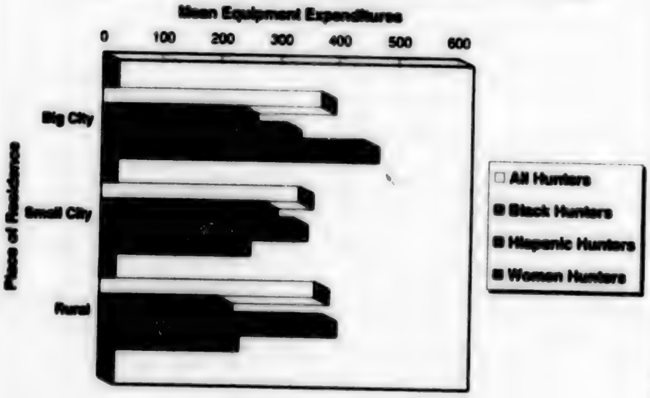


Figure 25 Mean Equipment Expenditures, by Place of Residence



Hunting on Private and Public Land

Understanding whether people hunt on private or public land can help resource managers meet the needs of hunters. For example, if most hunting is done on public land and crowding is a problem, there might be a need to pursue the acquisition of more land for public hunting or open more public land to hunting. Alternatively, there could be incentives offered to open more private land for public hunting. Figures 26 through 29 contain breakdowns for hunting on private land by age, education, income, and place of residence. Figures 30 through 33 contain the same breakdowns for hunting on public land.

More than 50 percent of each population of hunters hunt on private land (shown earlier in Figure 3). Typically, fewer hunters hunt on public land than private land. Examination of Figures 26 through 29 shows some interesting dips and spikes in hunting on private land. Hispanic hunters with less than a high school education are less likely to hunt on private land than Hispanic hunters with higher levels of education (Figure 27). Interestingly, this is accompanied by more hunting on public land for Hispanics with less than a high school education (Figure 31).

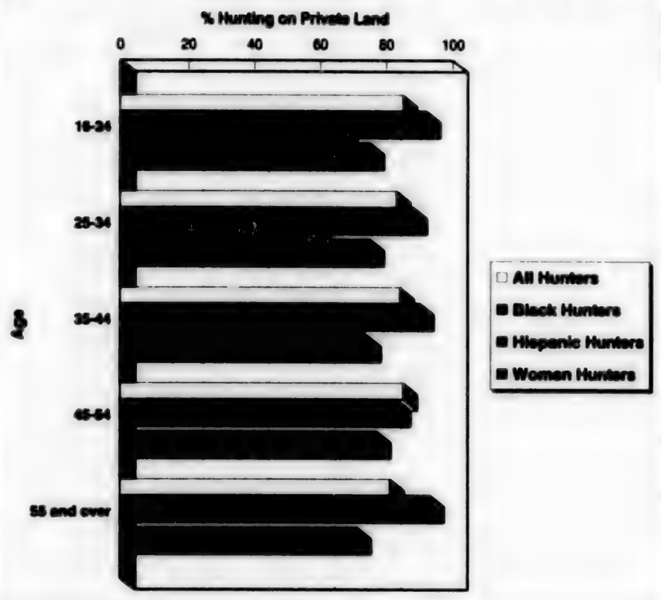


Figure 26 Hunters Hunting on Private Land, by Age

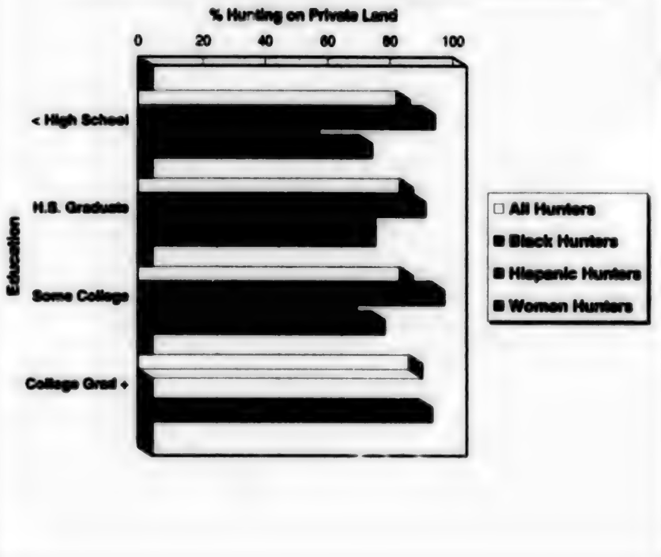


Figure 27 Hunters Hunting on Private Land, by Education

Figure 28 Hunters Hunting on Private Land, by Income

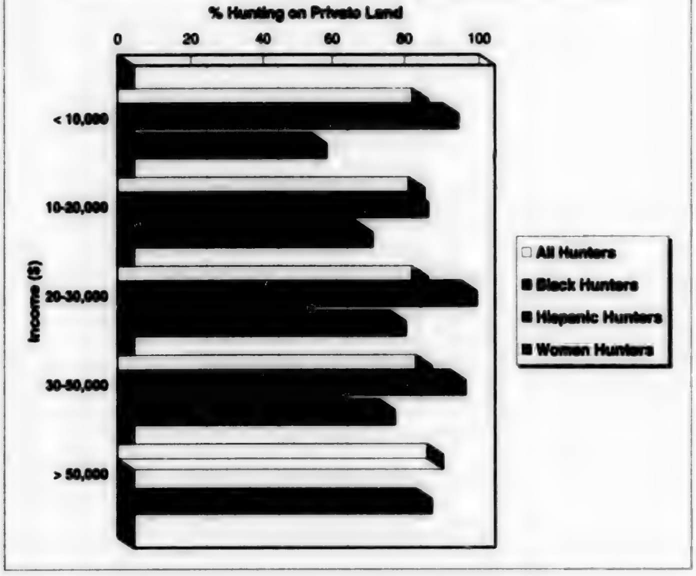
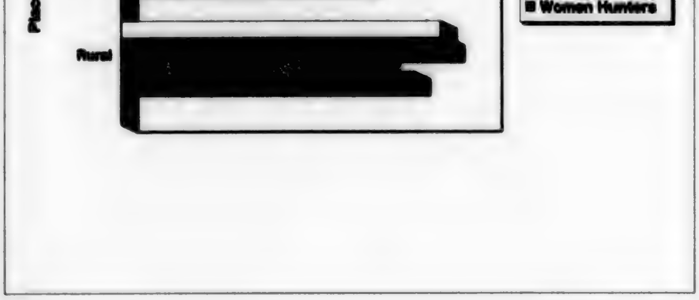


Figure 29 Hunters Hunting on Private Land, by Place of Residence



Hispanics in the $20-30,000 income category tend to hunt less on private land than Hispanic hunters in other income categories where data are reported. However, Hispanic hunters in this income categories were more likely than all other subpopulations to hunt on public land (Figure 32).

For the all hunters grouping the percent hunting on private land does not seem to be influenced by hunter income, age, education, and place of residence. However, participation on private land does vary with these demographic characteristics by subpopulation, with Black hunters having the highest rate of participation on private land.

Figure 30 Hunters Hunting on Public Land, by Age

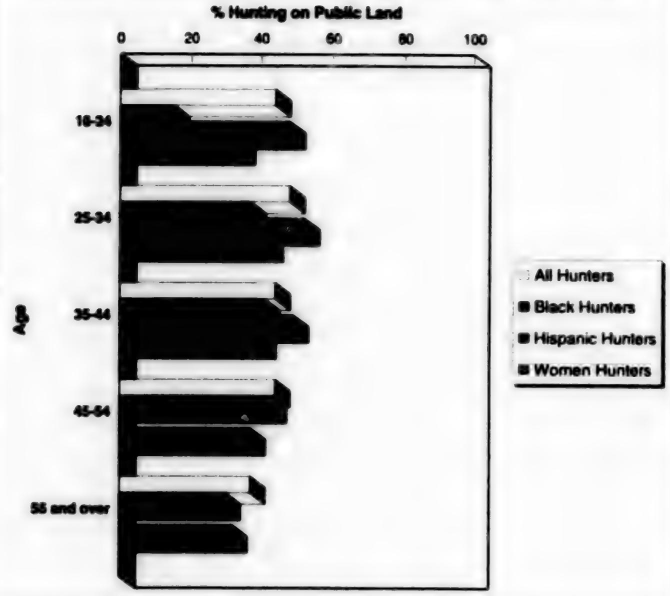


Figure 31 Hunters Hunting on Public Land, by Education

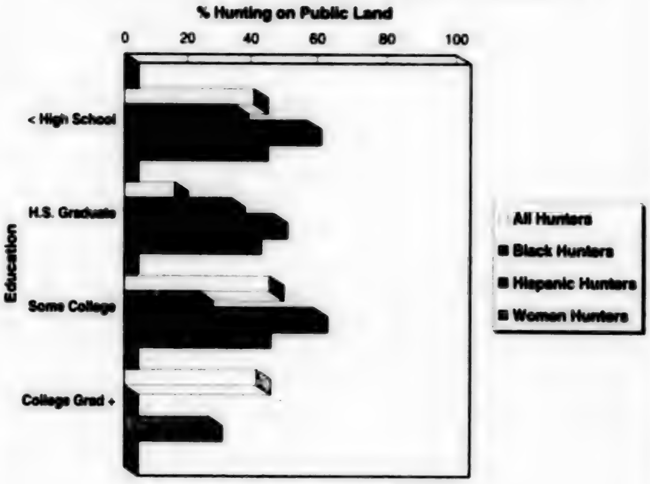


Figure 32 Hunters Hunting on Public Land, by Income

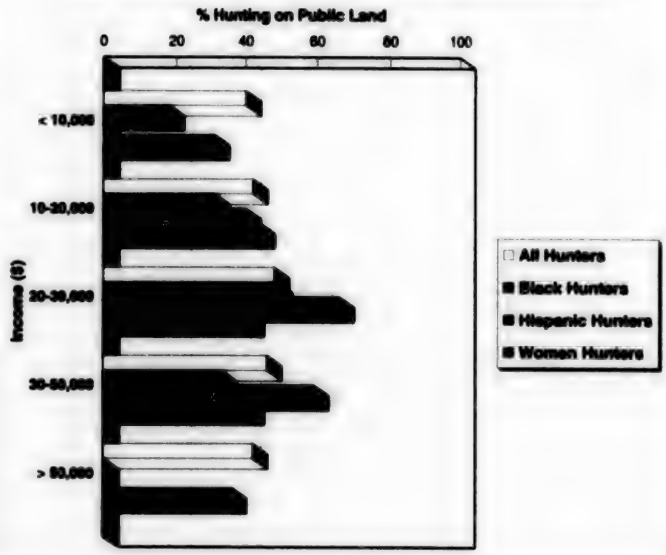
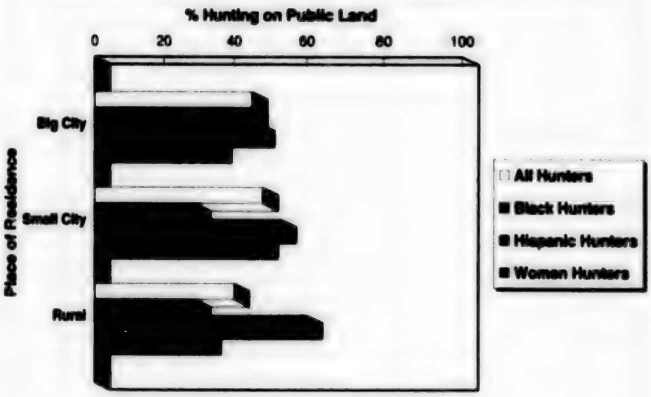


Figure 33 Hunters Hunting on Public Land, by Place of Residence



Overview

Table 2 shows the total number of anglers, total and mean fishing days, fishing trips, trip expenditures, and equipment expenditures for all, Black, Hispanic, and women anglers. Women made up the largest number of anglers from any of the subpopulations, 9.9 million, and spent nearly $3 billion on trip and equipment expenses. Women fished a total of 97.7 million days for an average of 10 days per angler. The smallest group in terms of number of anglers was Hispanics, yet they still constituted 1.2 million anglers in the United States. Hispanic anglers fished 14.4 million days and took 12.5 million fishing trips. Expenditures by Hispanic anglers approached $450 million with nearly $300 million being spent on fishing trip expenditures and $152 million on fishing equipment. More than 1.8 million Black anglers fished a total of 23.3 million days for an average of 12.9 days per angler. Black anglers took 22.6 million trips and spent more than $436 million on trip-related expenses. Equipment expenditures by Black anglers topped $158 million.

In total, Black, Hispanic, and women anglers spent nearly $4 billion on fishing trip and equipment expenses in 1991. This amounts to one-fourth of the total fishing expenditures in the U.S. These numbers support the notion that these groups are an important part of the fishing population. A better understanding of their fishing patterns and how they relate to the general fishing population can aid in providing more efficient resource management and recruitment of new anglers.

Table 2. Anglers, Days, Trips and Expenditures by Population Group: 1991.

(16 years old and older. Numbers in thousands)

	[redacted]	Black Anglers	[redacted]	Women Anglers
Anglers	[redacted]	1,815	[redacted]	9,935
Days of Fishing	[redacted]	23,273	[redacted]	97,699
Mean Days of Fishing	[redacted]	12.9	[redacted]	10.0
Trips	[redacted]	22,562	[redacted]	82,314
Mean Fishing Trips	[redacted]	12.5	[redacted]	8.3
Trip Expenditures	[redacted]	$436,599	[redacted]	$2,036,345
Mean Trip Expenditures	[redacted]	$243	[redacted]	$207
Equipment Expenditures	[redacted]	$158,461	[redacted]	$856,622
Mean Equip. Expenditures	[redacted]	$136	[redacted]	$152

Figure 34 shows a comparison of mean trip expenditures[5]. Women spent the least, on average, $207 per trip. Black and Hispanic anglers spent nearly the same at $243 and $244, respectively. Mean equipment expenditures are shown in Figure 35.[6] Of the subpopulations, Blacks spent the least on equipment, $136 on average, and Hispanics spent the most, $174 .

The bar graphs presented in the next section provide a better understanding of each individual population and differences among them. Comparisons are presented by age, education, income, and place of residence. Age and education are defined by their categories. Income is based on the respondents' household income. Place of residence is based on the respondents' judgement as to where the they lived: big city or urban area; small city or town; or rural area. No data are reported where the sample size is less than thirty.

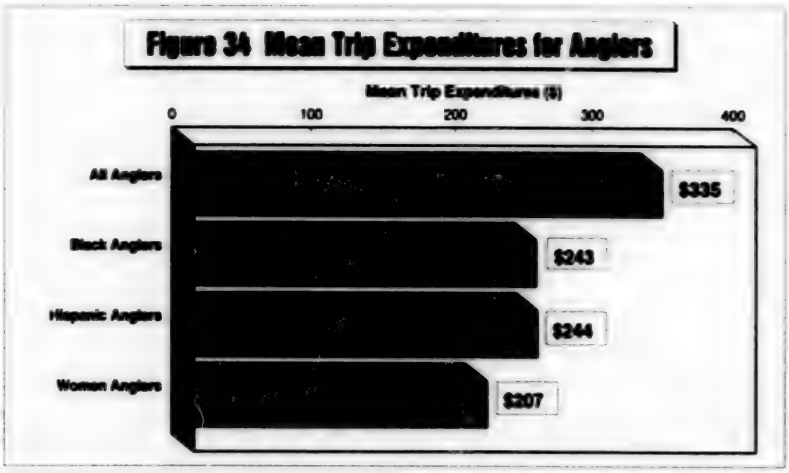


Figure 34 Mean Trip Expenditures for Anglers

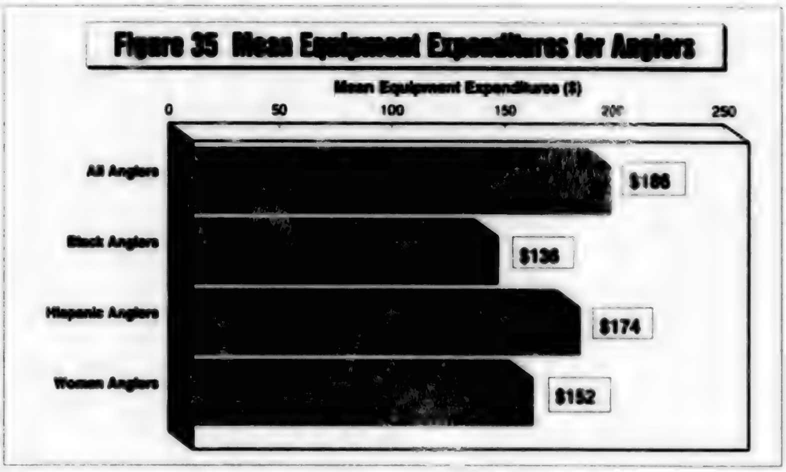


Figure 35 Mean Equipment Expenditures for Anglers

---

[5] Trip expenditures are made up of food, drink, lodging, public and private transportation, guide fees, pack trip or package fees, public and private land use access fees, boat fuel, launching, mooring, storage, maintenance, and insurance fees, bait, ice, and rental of equipment.

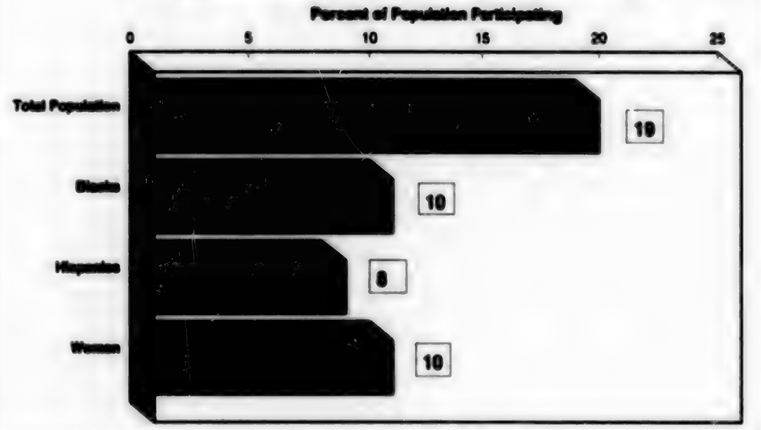
[6] Equipment expenditures are made up of rods, reels, lines, lures, tackle boxes, creels, stringers, fish nets, minnow traps, seines, bait containers, depth and fish finders, ice and spear fishing equipment, camping equipment, binoculars, special fishing clothing, processing and taxidermy costs and other equipment purchases. Excluded from these expenditures are special equipment purchases such as boats, campers, trucks, and cabins.

Fishing Participation

Figure 36 shows the fishing participation rates for the total population and each of the subpopulations. Blacks and women have a participation rate of ten percent. Hispanics have the lowest fishing participation rate, eight percent. The overall fishing participation rate for the U.S. population is nineteen percent. Participation rates by age are shown in Figure 37. Participation rates tend to be highest in the 25-34 age category. Blacks are an exception to this. The participation rate of Blacks increases from six percent for persons 16-24 years old to eleven percent for persons 45-54 years old and then drops to nine percent for persons 55 years old and older.

Participation rates by education level are shown in Figure 38. The highest participation rate for Blacks is for the less than high school education category, twelve percent. However, the participation rates for Blacks with a high school education and with a college education or more are just slightly lower at ten percent. Women show an increasing participation rate up through the some college category and then decline slightly at the highest education category. Hispanics also show increased participation rates with higher education with the highest participation rate of sixteen percent for Hispanics with a college education or more.

Figure 36 Participation Rates for Fishing



Fishing participation rates increase for all populations as income increases (Figure 39). However, participation drops off slightly at the $50,000 or more income category for women and all anglers.

Participation rates for fishing by place of residence are shown in Figure 40[7]. Participation by persons living in rural areas is higher for all populations than for persons living in small and big cities.

Figure 37 Participation Rates for Fishing, by Age

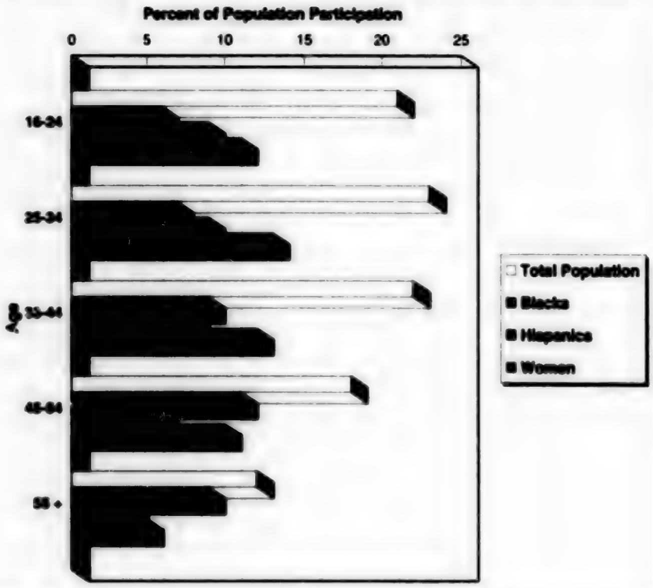


Figure 38 Participation Rates for Fishing, by Education

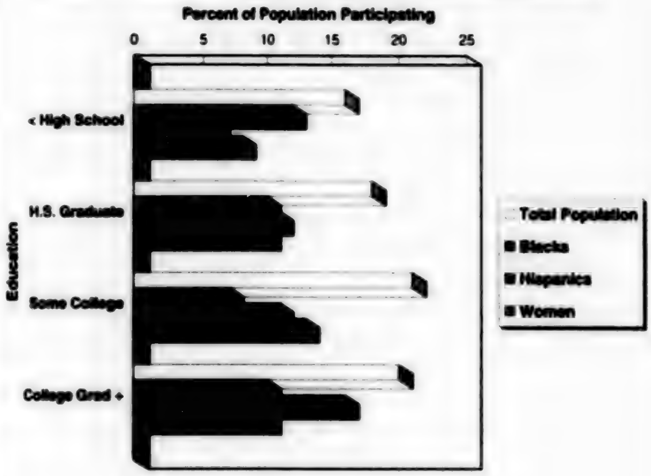


Figure 39 Participation Rates for Fishing, by Income

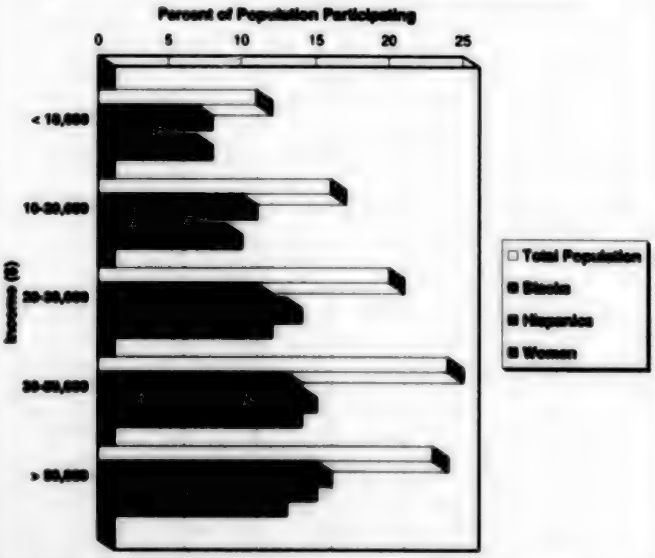
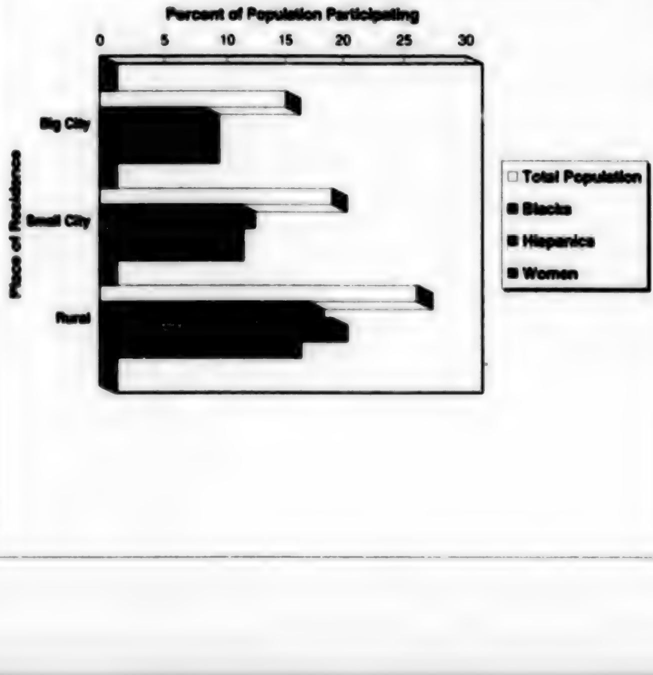


Figure 40 Participation Rates for Fishing, by Place of Residence



---

[7] Because of the high participation rate for rural residents, the scale on this bar graph is different from the other figures.

Figures 41 through 44 contain a breakdown, by demographic characteristics, for mean days of fishing for each population. Mean days participated for all anglers, Hispanic anglers, and women anglers are high at the 16-24 age category, drop for the 25-34 age category, and then stay steady or climb slightly for the higher age categories. Hispanic anglers show the biggest drop from the 16-24 to the 25-34 age group and then show a slight increase into the 45-54 age category. Black anglers do not have the same peak in mean days of fishing at the 16-24 age group but do show some increase in fishing days as they get older, up to the 45-54 age category.

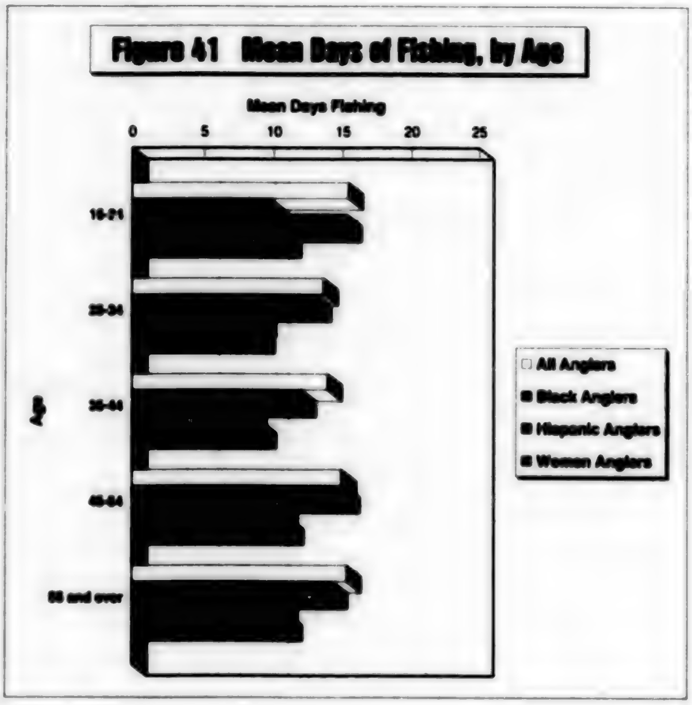


Figure 41 Mean Days of Fishing, by Age

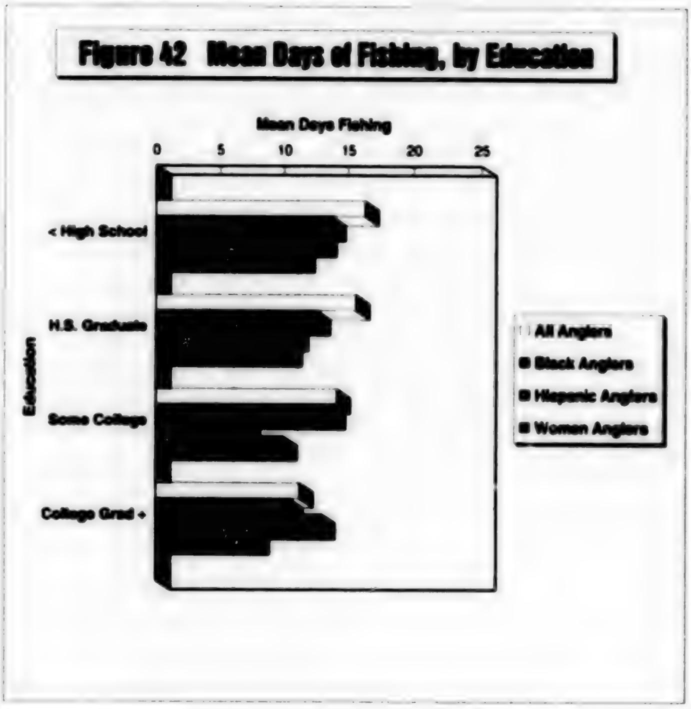


Figure 42 Mean Days of Fishing, by Education

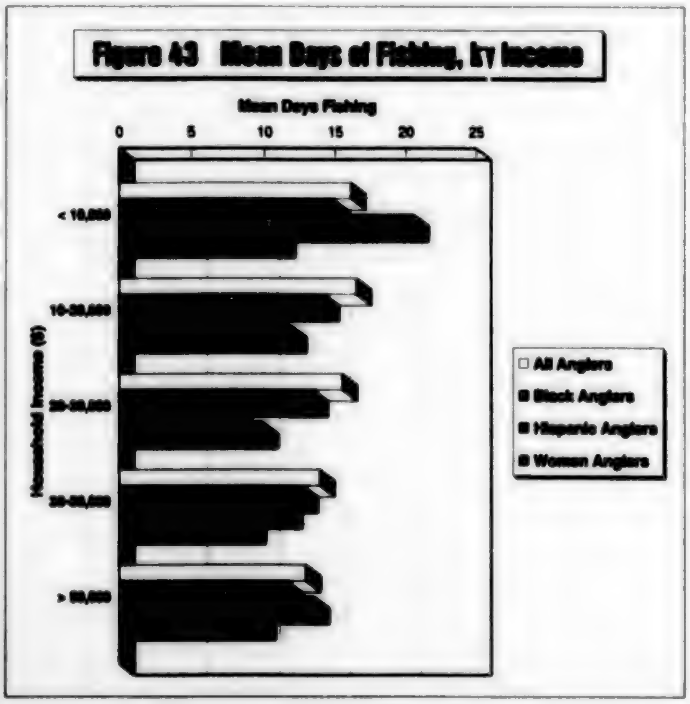


Figure 43 Mean Days of Fishing, by Income

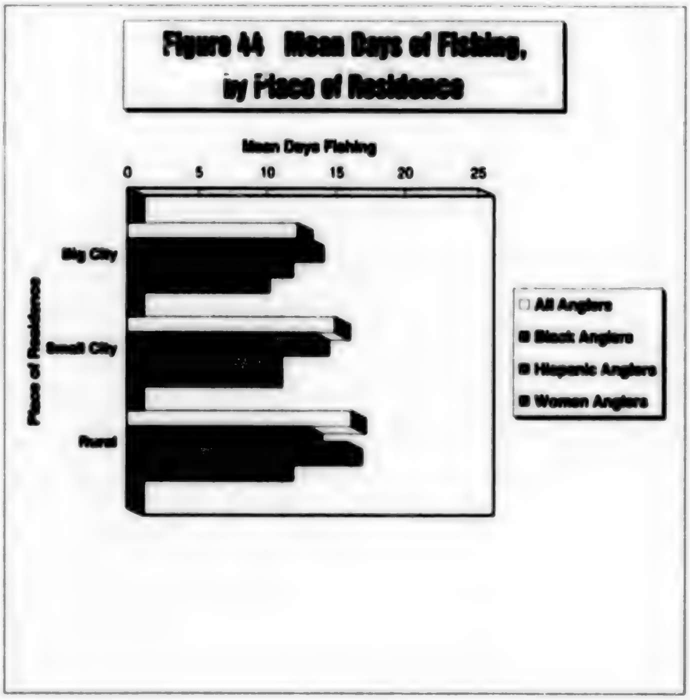


Figure 44 Mean Days of Fishing, by Place of Residence

Education is negatively correlated with mean days of fishing except for Blacks with some college and highly educated Hispanics (Figure 42). The most notable aspect of Figure 43 is that Hispanic anglers from households earning less than $10,000 fish considerably more days than any other group in any income category. Figure 44 shows that with the exception of Black anglers, rural anglers fish more days than nonrural anglers.

Figures 45 through 48 contain a breakdown of demographics for mean fishing trips. These figures are similar to the figures comparing fishing days. The total population of anglers tends to take more trips as they get older with an initial drop from the 16-24 year old category. Generally, fewer fishing trips are taken at higher education and income levels. However, Hispanics in the greater than $50,000 income category take more trips than Hispanics in any other income category over $10,000. Except for Blacks, anglers who reside in urban areas take fewer fishing trips than nonurban anglers.

Figure 45 Mean Fishing Trips, by Age

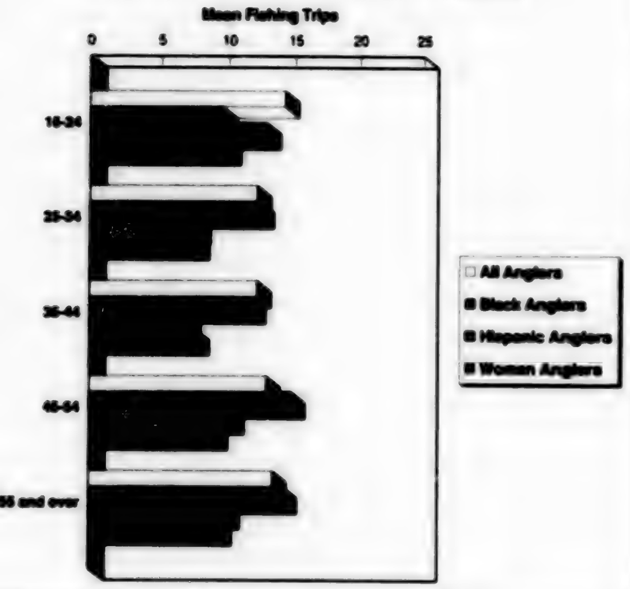


Figure 46 Mean Fishing Trips, by Education

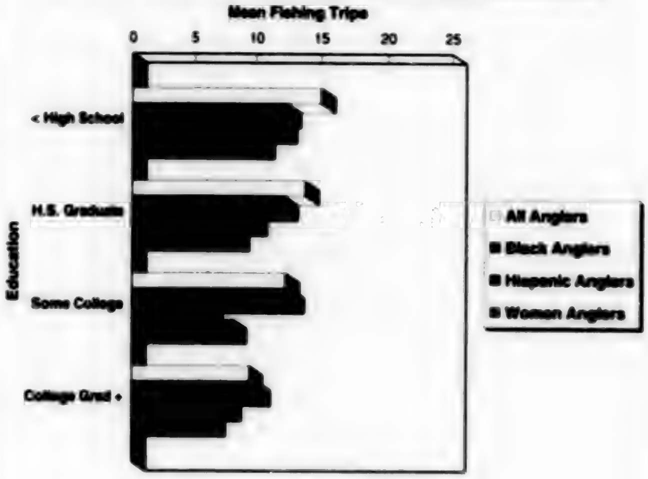


Figure 47 Mean Fishing Trips, by Income

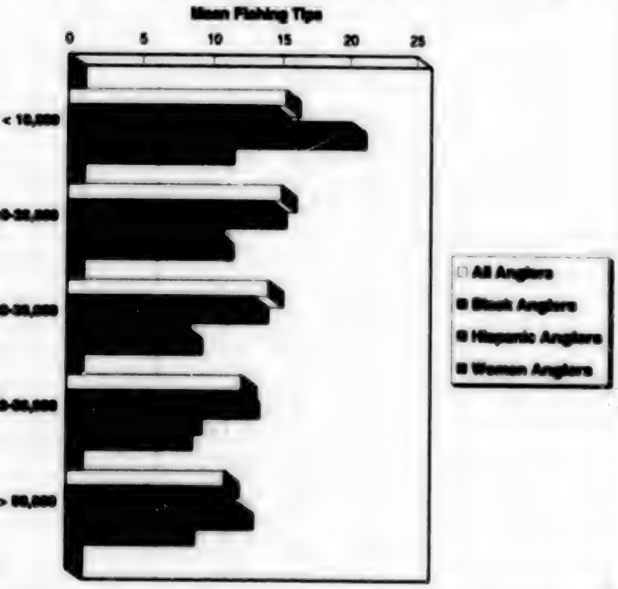
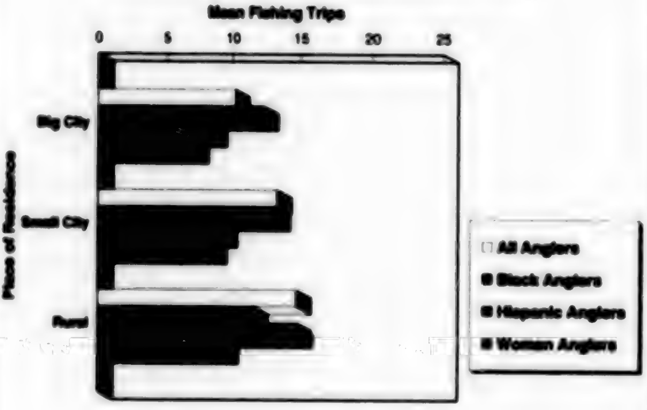


Figure 48 Mean Fishing Trips, by Place of Residence



Fishing Expenditures

Mean fishing trip expenditures are presented in Figures 49 through 52. For all anglers, trip expenditures increase with age then drop off after the 45-54 year old age group. Women follow the pattern of all anglers. Hispanic anglers mean fishing trip expenditures start high in the 16-24 age category, drop in the 25- 34 age category, then follow the pattern of all anglers peaking at the 45-54 age category. Black anglers trip expenditures are lowest at the 16-24 age category, peak at the 25-34 age category then fluctuate for the other age categories.

Mean trip expenditures tend to increase with education and income (Figure 50 and Figure 51). However, Hispanic anglers with some college have lower mean trip expenditures than do those who are high school graduates without any college. Mean trip expenditures for all the subpopulations are significantly higher for individuals with household incomes greater than $50,000.

Trip expenditures are relatively constant across urban and rural residences for Black and women anglers, showing a slight decline for less urban anglers (Figure 52). Hispanic anglers in rural areas spend more on trip expenses than Hispanic anglers in urban areas. The all anglers category has the highest mean trip cost for big city residents.

Figure 49 Mean Trip Expenditures, by Age

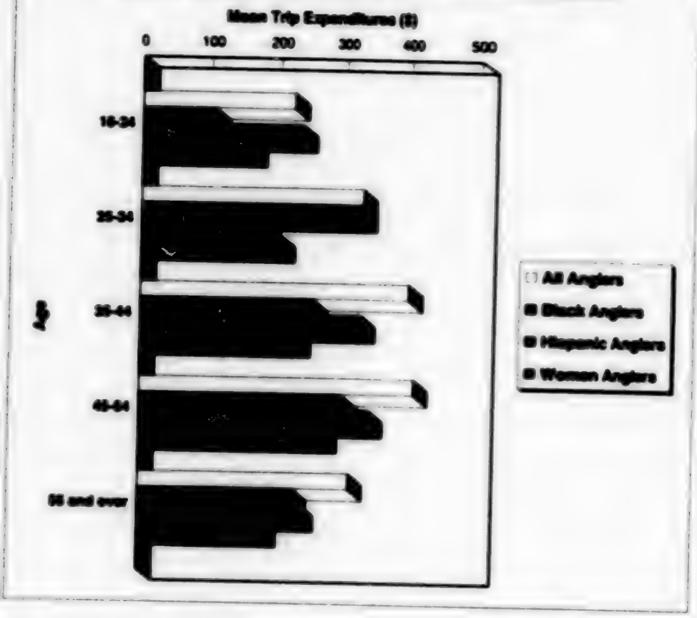


Figure 50 Mean Trip Expenditures, by Education

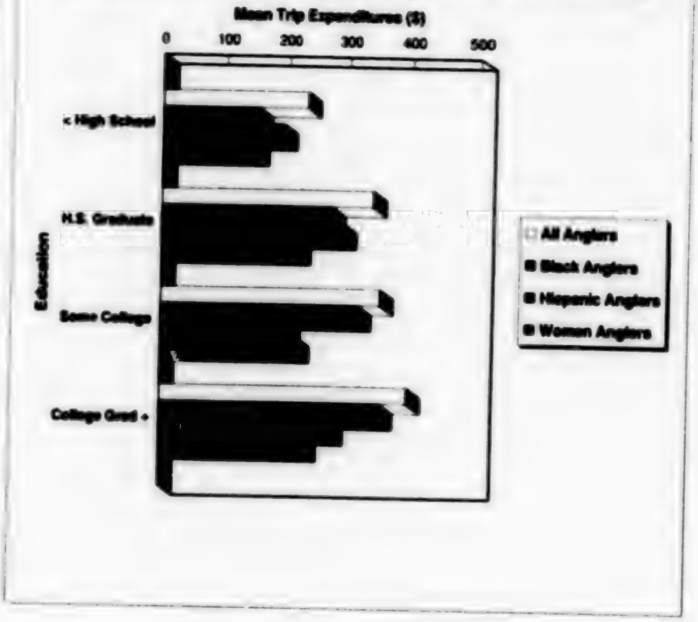


Figure 51 Mean Trip Expenditures, by Income

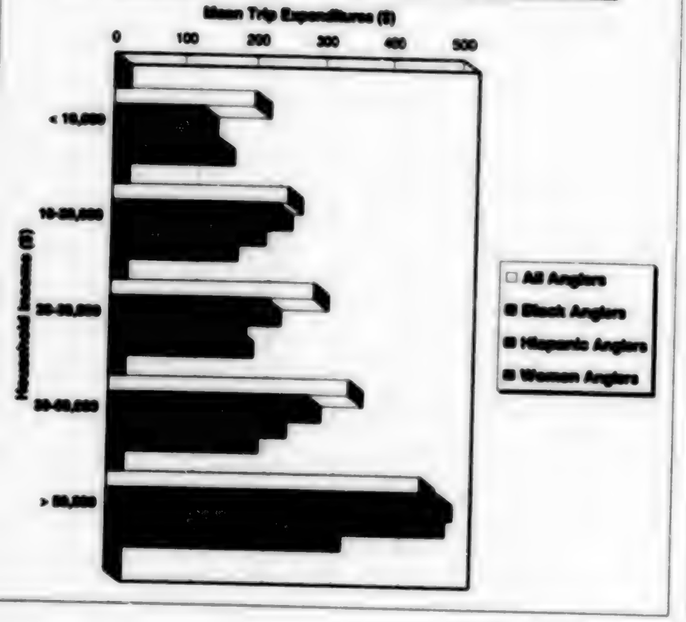
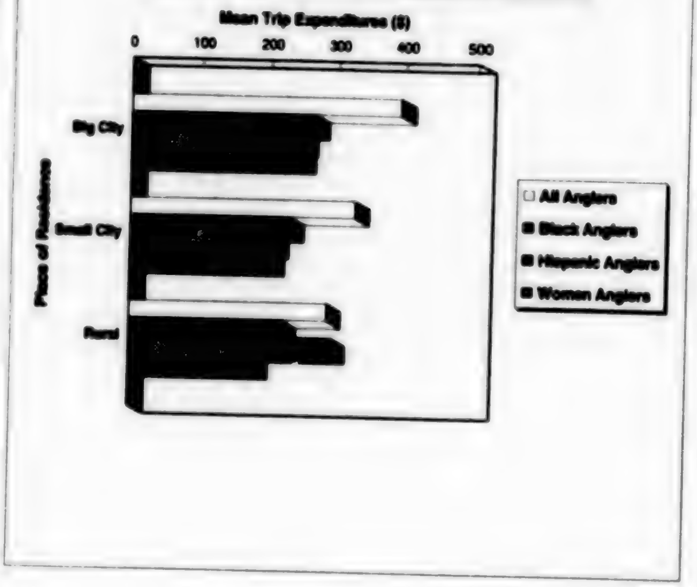


Figure 52 Mean Trip Expenditures, by Place of Residence



Figures 53 through 56 contain the breakdown for mean fishing equipment expenditures. Mean equipment expenditures tend to increase with age, education, and income. However, expenditures taper off at the highest age and education categories. Exceptions to this are Hispanic anglers who spend significantly less on equipment past age 44 and have very high mean equipment expenditures in the $10-20,000 income category. With the exception of women, urban residents in all groups spend at least as much on fishing equipment as do nonurban residents. Women in small cities have the highest mean equipment expenditures.

Figure 53 Mean Equipment Expenditures, by Age

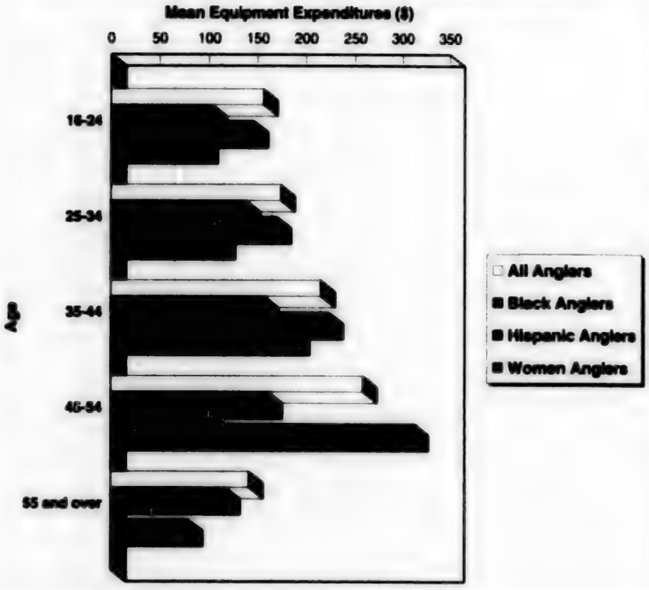


Figure 54 Mean Equipment Expenditures, by Education

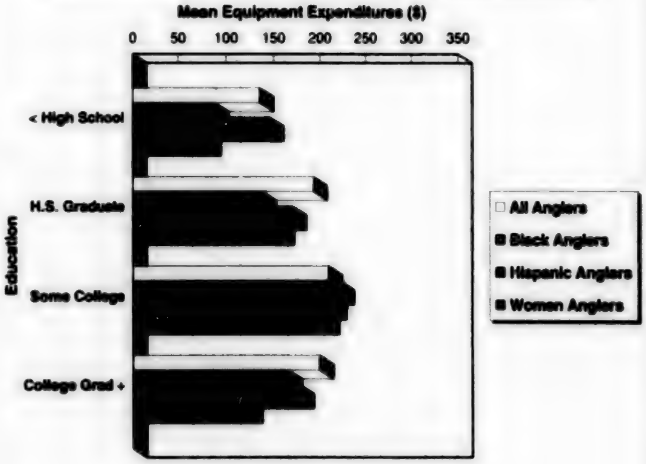


Figure 55 Mean Equipment Expenditures, by Income

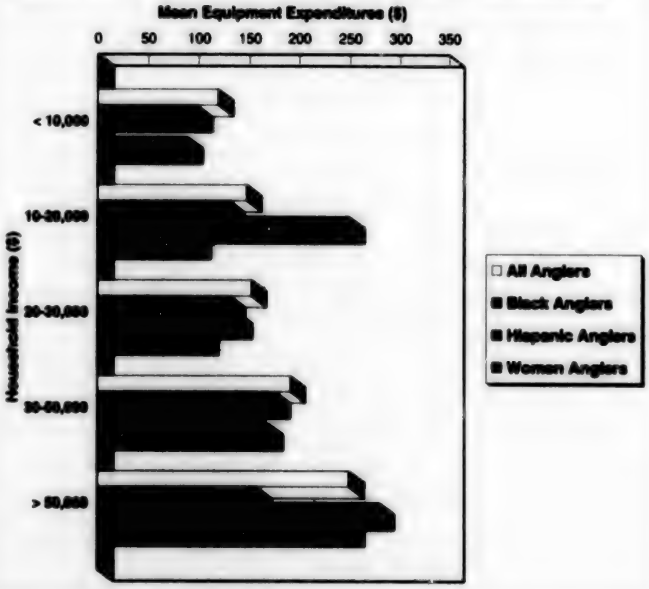
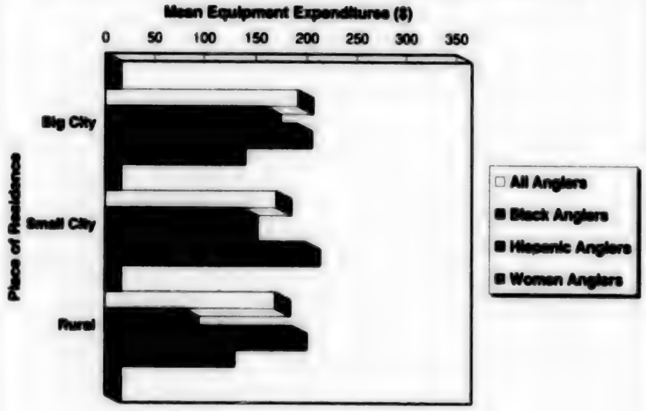


Figure 56 Mean Equipment Expenditures, by Place of Residence



Summary and Conclusions

A great deal of information about the participation patterns of Black, Hispanic, and women hunters and anglers has been presented in this report. This information includes participation rates, participation levels (days and trips), and expenditures (trip and equipment). This information can be used in conjunction with the information presented on all hunters and anglers to distinguish differences among and between the different populations. Understanding the participation and spending patterns of hunters and anglers can help wildlife managers better understand and meet the needs of their clientele. This information also can be useful to target areas where more can be done to meet current needs and to recruit new participants.

Participation rates of each subpopulation and the total population can be used to target groups for recruitment. For example, the overall participation rate in hunting is seven percent while the participation rates for the subpopulations of Blacks and Hispanics is two percent and the participation rate for women is one percent. Similarly, the fishing participation rates for the subpopulations are nearly half what the rate is for the total population. These subpopulations therefore provide the greatest potential for growth.

An additional breakdown of participation rates by age, education, income, and place of residence provides more data for focusing on certain groups. For example, the fishing participation rate for Blacks with some college education is lower than Blacks at any other education level. This could be an area to focus on recruitment of new anglers. The needs of Black anglers in this education category may be different and a higher participation rate might be achieved by discovering and meeting these needs.

Because the level of activity is just as important as whether someone participates or not, data on mean days of participation and mean number of trips were presented. Hunting and fishing participation data were presented for each subpopulation with a breakout for age, education, income, and place of residence categories. High points and low points can be found that indicate which groups participate a lot and which groups might be encouraged to participate more. There is a tendency for rural residents to take more trips and participate more days than nonrural residents. This may be due to differences in hunting and fishing opportunities in urban and rural areas. Higher participation levels may be attainable in urban areas by providing opportunities to participate closer to these residences. This is being done in some areas by providing urban fishing opportunities. Urban fishing opportunities can work to recruit new anglers and get current anglers to fish more.

Another part of this paper that is especially important to hunting and fishing industry interests and marketers is the information on expenditures. Information on trip expenditures and equipment expenditures is presented for each subpopulation and the total population with a breakout for age, education, income, and place of residence. One thing that came out of this analysis is that trip expenditures tend to be lower for rural residents than for urban residents. This may be due to the proximity of hunting and fishing sites. Examining high and low points in expenditures for equipment for the different demographic characteristics may help hunting and fishing merchandisers focus advertising for specific products toward certain groups. Certain new hunting and fishing equipment items might be more suited for individuals with higher average spending on equipment. These groups are not always the highly educated, high income participants. Likewise, other products might be better suited for hunters and anglers that spend less money on equipment.

Trip expenditures can be used in a similar way. High cost hunting and fishing trips would not likely be of interest to persons with low mean trip expenditures. They may be more interested in low cost trips. High cost package trips could be marketed more for persons with demographic characteristics where mean trip expenditures are high. These people have already shown by their past behavior that they are willing to spend more on hunting and fishing trips.

Information about expenditures can also be useful to the resource managers. It can be used along with the information on participation rates and participation levels. The information can be used to more effectively tailor conservation education programs to specific groups. Programs could be focused toward certain groups of people that are more likely to participate in hunting and fishing activities.

Another use of the demographic characteristics data for the subpopulations is information dissemination. If resource managers need to provide information to the users, i.e., hunters or anglers, knowing their characteristics can help in picking the correct medium for information dissemination. For example, if there is a planned change in hunting or fishing regulations such as catch or bag limits, seasons, or areas that are open to the public, agencies could use this information to choose the best medium (e.g., newspaper, magazines, television, posters)for targeting specific subpopulations of hunters and anglers. Things like this can be very important when the information is about such things as contaminated waters where fish should no longer be eaten. Agencies would want to be sure they reach all anglers, especially those who are eating the fish they catch. For example, Figures 43 and 47 show that there is a trend towards a higher number of fishing days and trips for lower income individuals. This may suggest fishing for food and thus an even greater need to get information about contamination out to these individuals.

Fishing participation rates, participation levels, and expenditures differ across demographic groups. Some of these differences are presented on a national level in this paper. Similar analyses can be done on a regional and statewide basis. However, there are limits to the amount of analysis that can be done on a state-by-state basis with this data base because of small sample sizes. This is especially true for states that have low minority participation rates. However, aggregating data from several states to form geographically similar regions can be useful for building sample sizes and providing more specific information about certain areas.

END

03-05-98